



Utah Department of **NATURAL RESOURCES**

FOR IMMEDIATE RELEASE

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Drought Update for the Week of August 16

Salt Lake City (August 18, 2021) – The [U.S. Drought Monitor](#) is reflecting a slight improvement in drought conditions, with 98.75% now in “extreme” or “exceptional” drought compared to 99.43% last week. This time last year, drought was starting to worsen with 24% in “extreme” drought, with nowhere in the “exceptional” drought category.

“Conditions are still extremely dry, and wildfire risk remains high, as evidenced by the Parleys Canyon Fire. As we get rain and temperatures start to cool, we ask people to reduce outdoor watering accordingly,” said Utah Department of Natural Resources Executive Director Brian Steed. “Every drop we save is water we can use later and helps stretch this precious resource. Many Utahns have heeded the call to conserve, and it’s making a difference.”

The following [drought](#) impacts from the week of Aug. 16 are compiled by the Utah Divisions of [Water Resources](#), [Water Rights](#), [Wildlife Resources](#), [State Parks](#), the [Department of Environmental Quality](#) and the [Department of Agriculture & Food](#).

At-a-glance changes for the week:

- **Thirty-three of Utah’s largest 42 reservoirs are below 55% of available capacity.** Overall statewide storage is 51% of capacity (53% last week). (Utah Lake decreased slightly to once again dip below 55%)
- Of the 97 measured streams, 65 flowed below normal this week compared to 49 last week. Flows from the heavy rainstorms have receded, and soils are drying out.
- After consistent harmful algal bloom treatment, the Lindon Marina at Utah Lake has been downgraded from a Danger to a Warning advisory. Recreators are still advised to take precautions by avoiding areas of scum, not ingesting the water, cleaning fish and discarding guts, and keeping animals away.
- Several years of ongoing drought conditions and the extreme drought this summer have decreased mule deer populations across the state. [More information.](#)
- Farmers and ranchers continue to face severe effects of the drought.



- Hay supplies and rangeland conditions remain an issue for farmers and ranchers, with 81% of hay and roughage supplies rated as short or very short and 70% of pasture and rangelands rated as poor to very poor.
- 88% of irrigation water and stock water supplies are rated as short to very short.
- Boat ramp closures remain the same as last week, with closures at eight state parks, including Jordanelle, Antelope Island, Echo, Hyrum, Millsite, Piute, Rockport, Willard Bay and Yuba. Caution advisories have also been issued for six additional state park boat ramps. View conditions [here](#).

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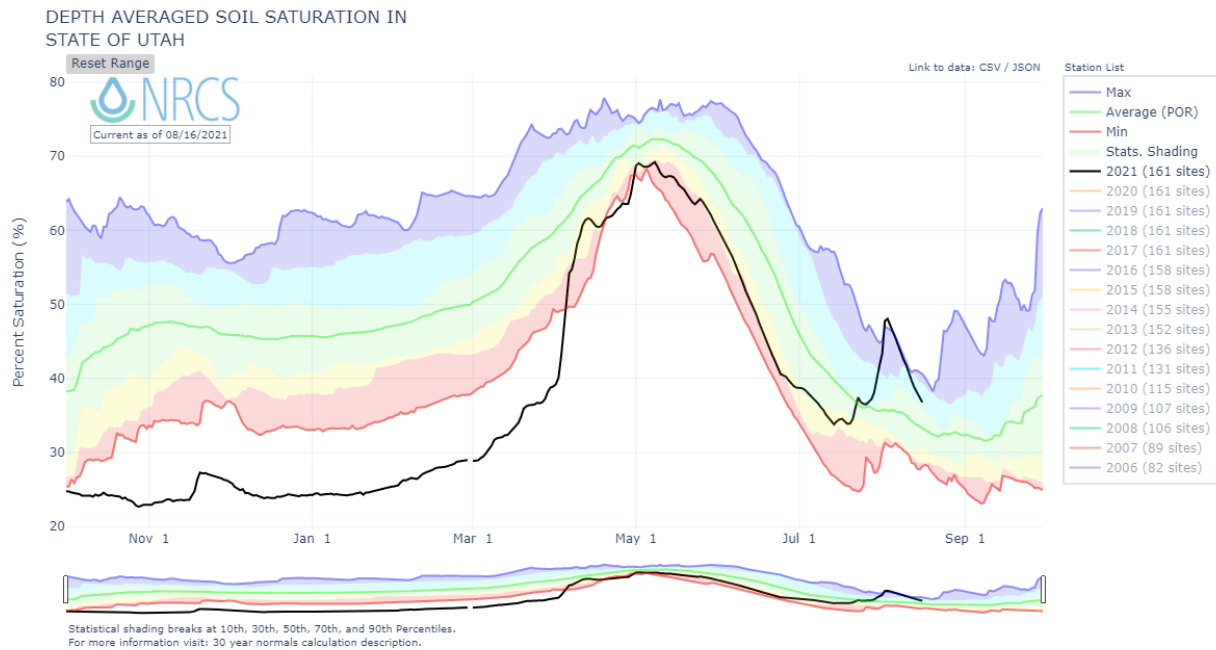
FULL REPORT: WEEK OF AUGUST 16

Public Water Systems

- The Wolf Creek Water and Sewer Improvement District has enacted a moratorium on new water service hookup approvals due to increased demand and ongoing drought concerns. The system will reevaluate the moratorium in March 2022.
- The towns of Bicknell and Mayfield have reported a drop in production from their existing springs.

Precipitation and soil moisture

- Precipitation accumulation (as measured at NRCS SNOTEL sites) continues to be well below average. To restore conditions to “average” for the year, Utah still needs about 11.5 inches of rain: 8.5 inches to cancel the deficit and 3 inches to account for the precipitation traditionally accumulated from mid-August through September.
- To get streams running at healthy levels while filling reservoirs, Utah needs late summer and early fall storms to return soil moisture levels to normal, which will help snowpack runoff make it to streams and reservoirs rather than get absorbed by dry soils. The state also needs an above-average snowpack to refill reservoirs.
- Air temperatures for the week were 1.2 degrees Fahrenheit above average.
- Overall (mountain and valley locations), the state has seen 66% of the precipitation typically received in a normal water year (Oct. 1 through Sept. 30).
- The increase in soil moisture seen around the state after recent rainstorms continues to drop and is 3.4% above average (6.9% last week) for this water year. Wet soils are critical in the fall as the state begins to accumulate its winter snowpack. As seen in the chart below, significant increases and decreases in soil moisture are typical for late summer.



Recent rainstorms are reflected as a significant increase in soil moisture followed by a decline in the state soil moisture sensors (found at mountain [SnoTel sites](#)). Healthy soil moisture levels allow snowpack runoff to enter the streams and reservoirs rather than get absorbed by dry soils. Monsoonal patterns never occurred the last two years, leading to record dry soils in October 2020 and throughout the winter (reflected in the graph above).

Streamflows

Cumulative flow of 28 headwater streams continues to flow at about 50% of normal.

- Sixty-five (49 reported last week) of Utah's 97 streams reporting data are flowing below normal, which is 16 more than the previous week.
- Four streams are flowing at their lowest levels ever recorded, nearly as many as last week.
- Daily flow from 28 headwater streams is currently flowing above the previous maximum daily flow record but well below typical for this time of year.

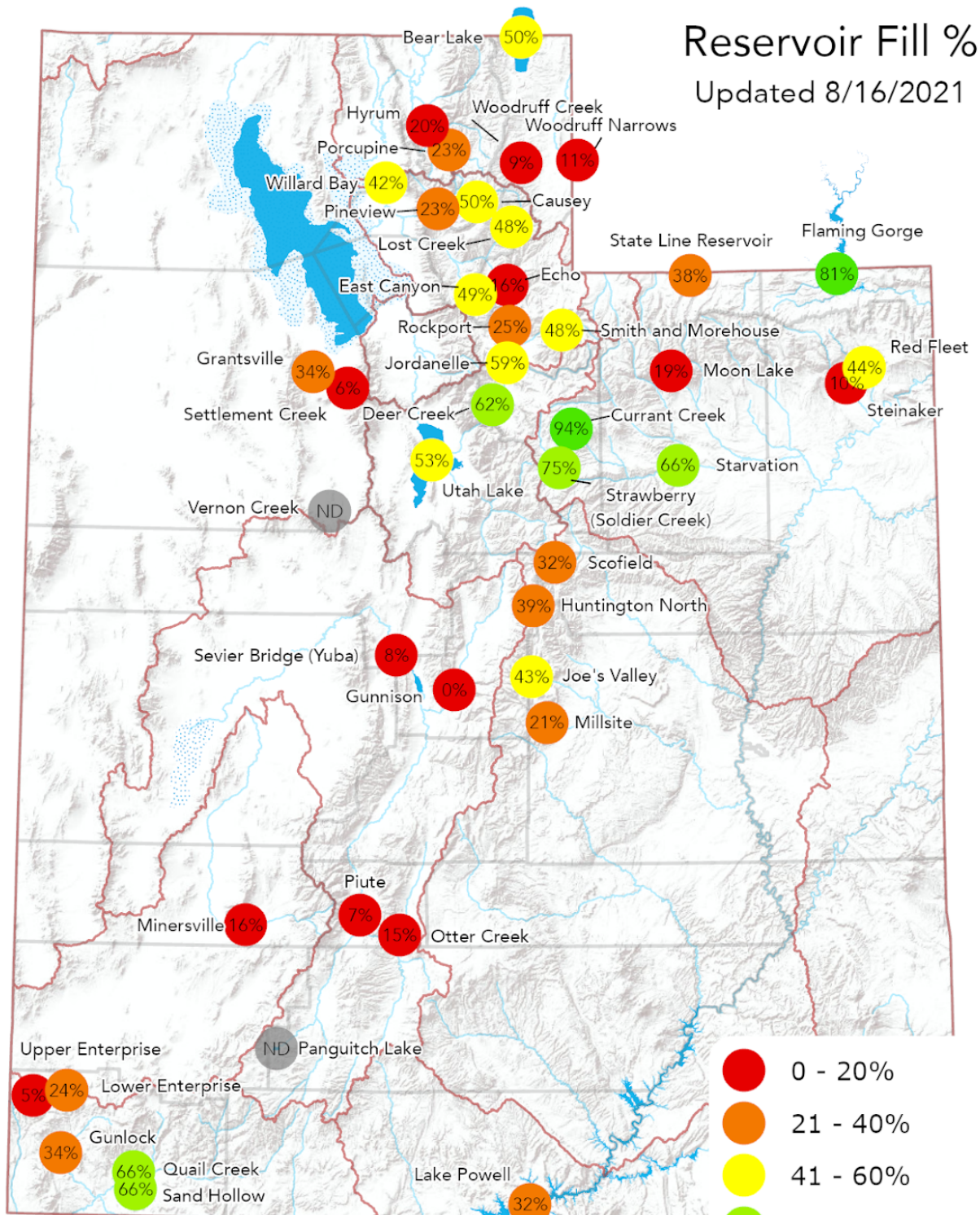
Reservoir and Lake Levels

About 95% of Utah's water comes from snowpack. This statewide average ranges from around 75% in the southwest corner to over 95% in the northern part near the Weber Basin headwaters. Different-sized reservoirs are located throughout the state to catch and store runoff. Small reservoirs store about one year's worth of water, while larger reservoirs, like Strawberry or Jordanelle, store several year's worth. Reservoir storage helps to prevent water shortages and is dependent on snowpack and runoff.

- The capacity of major reservoirs statewide dropped 2% to 51% (last week, it was 53%).
- Thirty-three of Utah's largest 42 reservoirs are below 55% of available capacity. Utah Lake dipped again to below 55%.
- The Great Salt Lake's elevation continues to drop slowly and is currently 4191.0, about 4.8 inches below the record low.

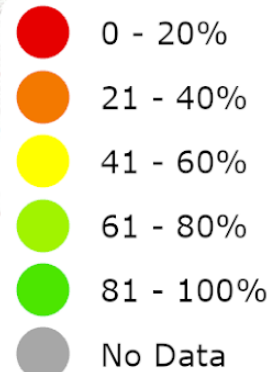
Reservoir Fill %

Updated 8/16/2021



Data Sources

Bureau of Reclamation, Bear River Commission,
Emery Water Conservancy District,
Sevier River Water Users Association,
Washington County Water Conservancy District



Drought Effects on Priority Distribution of Water Rights in Utah (updated August 17)

Water rights are distributed by the state engineer with priority going to the earliest rights. For example, a water right established in 1889 is entitled to receive its full flow before water rights established in 1890 or later can receive any water. This principle is called the “Prior Appropriation Doctrine” or “first in time, first in right.” The earliest water rights in Utah are called “direct flow” rights, meaning they cannot be stored. Storage reservoirs were built later on, so storage rights generally have priority dates later than direct flow rights. However, some “high” water rights (direct flow rights with late priority dates) exist.

While public water suppliers own some water rights, others are held by individuals like farmers and ranchers. Priority distribution happens every year, not just during droughts, and occurs irrespective of the type of use. Most water rights are fully or partially curtailed by mid-summer when the natural flow of a stream drops following spring runoff. The term “natural flow” refers to the total supply of a stream, which is generally different from the flow of the stream at any particular point.

Natural flow on complex systems is determined using accounting models developed by the Division of Water Rights. Water can be stored on the system when the natural flow is greater than 100% of the direct flow rights. When the natural flow drops below 100% of the direct flow rights, these rights are reduced according to priority date. Storage, if available, can be released to make up all or part of the deficit. The amount of storage available on each system is a function of the specific projects developed on the system over the last hundred-plus years. This year has seen an early decrease in natural flow because of very little spring runoff. In previous years systems were generally storing water in mid-June, sometimes in considerable amounts, while 2021 is already seeing some of the earliest water rights being curtailed.

While statewide, there are many different river systems, the information below highlights water rights priorities, natural flow and direct flow on just four of them. CFS below stands for cubic feet per second.

Middle Bear River – Priorities: Direct Flow (1860 - 1909), Storage (1911), High Rights (1914 - 1989)

<i>Date</i>	<i>Priority from River</i>	<i>Natural Flow</i>	<i>% Direct Flow Rights</i>
Aug 12, 2019	1904	955 cfs	69%
Aug 12, 2020	1897	619 cfs	44%
Aug 12, 2021	1897	487 cfs	35%

- The water supply on the Logan River, tributary to the Middle Bear, is third lowest on record out of 58 years (1977 and 1992 were lower) according to the CRBFC Water Supply Forecast (Station LGNU1).
- Currently, only 35% of the direct flow water rights are being met, with earliest priority rights being fulfilled from 1860 to 1897.

Upper Provo River – Priorities: Direct Flow (1st Class - 17th Class), Storage

<i>Date</i>	<i>Priority from River</i>	<i>Natural Flow</i>	<i>% Direct Flow Rights</i>
Aug 17, 2019	80% 1 st Class	124 cfs	27%
Aug 17, 2020	30% 1 st Class	47 cfs	10%
Aug 17, 2021	30% 1 st Class	47 cfs	10%

- The water supply on the Provo River at Hailstone is the third-lowest on record out of 67 years (1977 and 1961 were lower) according to the CRBFC Water Supply Forecast (Station PVHU1).

- Currently, only 10% of the direct flow water rights are being met, consisting of only 30% of 1st Class rights.

Upper Duchesne River – Priorities: Direct Flow (1900 - 1964), Storage (1964)

Date	Priority from River	Natural Flow	% Direct Flow Rights
Aug 16, 2019	Storage	444 cfs	40%
Aug 16, 2020	1910	151 cfs	14%
Aug 16, 2021	1910	124 cfs	11%

- The water supply on the Duchesne River at Randlett is the second-lowest on record out of 79 years (1977 was lower) according to the CRBFC Water Supply Forecast (Station DURU1).
- Currently, only 11% of the direct flow water rights are being met, with the earliest priority rights being fulfilled from 1900-1910.

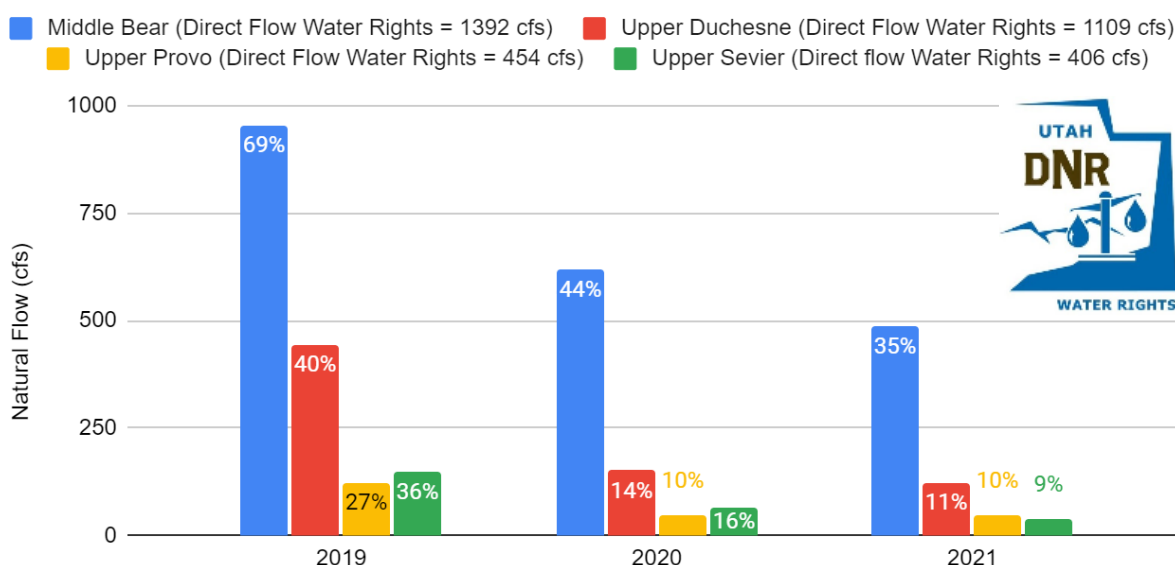
Upper Sevier River – Priorities: Direct Flow (1st Class – 3rd Class), Storage

Date	Priority from River	Natural Flow	% Direct Flow Rights
Aug 16, 2019	50% 1 st Class	148 cfs	36%
Aug 16, 2020	22% 1 st Class	65 cfs	16%
Aug 16, 2021	13% 1 st Class	38 cfs	9%

- The water supply on Salina Creek is the third-lowest on record out of 58 years (1977 and 2018 were lower), according to the CRBFC Water Supply Forecast (Station SAYU1).
- Currently, only 9% of the direct flow water rights are being met, consisting of only 13% of 1st Class rights.

Natural Flow Distribution on Four River Systems (Aug 17)

Percent Values Greater than 100 Indicate Water Being Stored



Well Replacements

In addition to surface water rights, the state engineer oversees groundwater appropriation and construction of groundwater wells. As groundwater conditions change, well owners may need to replace their well. This may be due to issues with the existing well or the need to drill deeper. When this happens, a water user files either a replacement or renovate application. In some

cases, a change application may need to be filed. This is dependent on the individual status of the user's water right.

- Five new well-replacement applications were filed in the last week. The total number of replacement and deepening requests this year is 103 statewide.
- As a comparison, there were 113 in 2020 and 102 in 2019. The average annual count during the past five years is 107.